

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A drill template for a structure having a mold line surface fabricated according to a precise definition using computer aided design (CAD), comprising:

5 a vacuum housing having a CAD-formed contact surface integral with and formed of the same material as said vacuum housing, wherein said vacuum housing and contact surface are built directly from said precise definition for the mold line surface of the structure using one of selective laser sintering, fused deposition modeling, or stereo-lithography so that said vacuum housing contact surface has the form of an exact fit to the mold line surface of
10 the structure at said CAD-formed contact surface whether or not in contact with the structure; and

at least one drill bushing extending through said vacuum housing from a top surface to an interior surface of said vacuum housing.

2. (original) The drill template as claimed in claim 1 wherein said vacuum housing includes a vacuum port adapted to be connected to a vacuum system.

3. (original) The drill template as claimed in claim 1 wherein said vacuum housing includes a CAD-formed edge of part locator.

4. (original) The drill template of claim 1 wherein said CAD-formed

contact surface of said vacuum housing conforms to a CAD engineering solid model of the outside mold line surface of a structure.

5. (original) The drill template of claim 1 wherein said vacuum housing is formed of a laser sintered material using a CAD solid model to achieve an exact fit to a surface of a structure.

6. (original) The drill template of claim 1 wherein said vacuum housing includes at least one index hole extending from said top surface to said contact surface of said vacuum housing.

7. (currently amended) A drill template for drilling holes into a structure with an exterior surface formed using a computer aided design (CAD) engineering solid model, the exterior surface precisely specified by a CAD geometry of the engineering solid model, said drill template comprising:

5 a vacuum housing having a CAD-formed contact surface, said vacuum housing being formed by selective laser sintering, wherein said contact surface is formed integrally as part of said vacuum housing and of the same material by selective laser sintering according to the precisely specified CAD geometry used to form the exterior surface so that said integral contact surface
10 has the form of an exact fit to the exterior surface;

at least one drill guide bushing extending through said vacuum housing from a top surface to an interior surface of said vacuum housing; and

at least one vacuum port integral to said vacuum housing, wherein said vacuum housing and said vacuum port are formed integrally of the same
15 material by selective laser sintering.

8. (original) The drill template of claim 7 wherein said vacuum housing includes at least one drill support attachment positioned near said at

least one drill guide bushing, said at least one drill support attachment adapted to secure a drill to said drill template.

9. (original) The drill template of claim 7 further including a skirt having said CAD-formed contact surface, said skirt enclosing an interior space to form a vacuum chamber.

10. (original) The drill template of claim 9 wherein said vacuum port communicates with said vacuum chamber.

11. (original) The drill template of claim 7 wherein said CAD-formed contact surface of said vacuum housing conforms to an exact fit with a mold line surface of said structure.

12. (currently amended) A debris collecting vacuum drill template for forming holes in a structure, said drill template comprising:

a vacuum housing having a CAD-formed contact surface;

at least one recess accommodating a fastener that holds sections

5 of said vacuum housing together;

at least one drill bushing extending through said vacuum housing from a top surface to an interior surface of said vacuum housing;

at least one drill support attachment positioned near said at least one drill bushing, said at least one drill support attachment adapted to secure a
10 drill to said drill template; and

an integral vacuum port that provides vacuum communication from an opening to said interior surface.

13. (original) The drill template of claim 12 further including at least one fastener arm with a fastener that holds sections of said vacuum housing

together.

14. (original) The drill template of claim 12 further including at least one dovetail groove, said dovetail groove filled with a hardened adhesive that holds sections of said vacuum housing together.

15. (canceled)

16. (original) The drill template of claim 12 further including at least one hole accommodating with a press fit a dowel pin that aligns and holds sections of said vacuum housing together.

17. (original) The drill template of claim 12 wherein said vacuum housing includes at least one index hole for positioning and aligning said vacuum housing on said structure.

18. (original) The drill template of claim 12 wherein said vacuum housing includes a CAD-formed edge of part locator formed according to a CAD solid model of said structure.

19. (original) The drill template of claim 12 wherein said vacuum housing is formed from nylon by selective laser sintering.

20. (currently amended) A drilling system for an aircraft fuselage structure having an outside mold line surface formed according to a computer aided design (CAD) engineering solid model, and having the outside mold line surface specified using CAD electronic data files of the CAD engineering solid
5 model, said system comprising:

a drill template which includes:

a vacuum housing with a skirt having a CAD-formed contact surface, wherein said skirt, including said contact surface of said skirt, and said vacuum housing are integrally fabricated by being generated directly using said
10 CAD electronic data files of the CAD engineering solid model to conform to the CAD engineering solid model of the outside mold line surface of the aircraft fuselage structure so that said CAD-formed contact surface has the form of
formed to an exact fit with [[a]] the outside mold line surface of said aircraft fuselage structure prior to contacting the outside mold line surface of the aircraft
15 fuselage structure;

at least one drill guide bushing extending through said vacuum housing from a top surface to an interior surface of said vacuum housing;

at least one vacuum port integral to said vacuum housing, wherein said vacuum housing and said vacuum port are integrally fabricated along with
20 said skirt;

at least one index hole for positioning and aligning said vacuum housing on said aircraft fuselage structure, said index hole extending from said top surface to said CAD-formed contact surface of said vacuum housing;

a CAD-formed edge of part locator formed according to a CAD
25 solid model of said aircraft fuselage structure and fitting to a precise location of said aircraft fuselage structure; and wherein

[[a]] said vacuum port that provides vacuum communication from an external opening to said interior surface.

21-26. (canceled)